

Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claims 1 – 104 (canceled)

Claim 105 (currently amended) A method of sequentially scanning a plurality of substantially non-overlapping regions of an internal biological sample, the method comprising the steps of:

sequentially illuminating said plurality of substantially non-overlapping regions of said sample with electromagnetic radiation using illuminating optics ~~at a pulse rate greater than 25 pulses per second~~, said sample not surgically exposed; and
controlling a field stop in order to probe a volume element of said sample, wherein said field stop comprises at least one member selected from the group consisting of a liquid crystal, a ferroelectric element, a polymer dispersed liquid crystal, and an electromechanical shutter; and

collecting electromagnetic radiation emanating from said regions of said sample using collecting optics.

Claim 106 (previously presented) The method of claim 105, wherein said illuminating step comprises focusing said illuminating radiation on said sample using a movable mirror.

Claim 107 (previously presented) The method of claim 105, wherein said collecting step comprises focusing said emanating radiation on a detector using a movable mirror.

Claim 108 (previously presented) The method of claim 105, further comprising the step of detecting electromagnetic radiation emanating from at least one of the regions of said sample and comparing said detected emanating radiation to at least one standard.

Claim 109 (previously presented) The method of claim 105, wherein said sample comprises biological tissue.

Claim 110 (previously presented) The method of claim 109, wherein said biological tissue comprises cervical tissue.

Claim 111 (previously presented) The method of claim 105, further comprising the step of diagnosing a disease state based upon a comparison of said emanating electromagnetic radiation to one or more standards indicative of various states of health.

Claim 112 (canceled)

Claim 113 (previously presented) The method of claim 105, further comprising the step of selecting predetermined wavelengths of said emanating electromagnetic radiation for analysis.

Claim 114 (canceled)

Claim 115 (previously presented) The method of claim 105, wherein said illuminating and emanating electromagnetic radiation pass through at least a portion of a sheath.

Claim 116 (previously presented) The method of claim 108, further comprising detecting said emanating radiation with an array of detectors.

Claim 117 (previously presented) The method of claim 116, wherein said array of detectors comprises optical elements and processors.

Claim 118 (previously presented) The method of claim 107, wherein said movable mirror comprises a beam splitter to split said emanating radiation into a plurality of individual wavelengths.

Claim 119 (previously presented) The method of claim 118, wherein said beam splitter comprises a spectrometer.

Claim 120 (canceled)

Claim 121 (currently amended) The method of claim 105+20, wherein a dimension of said field stop allows non-diffraction-limited illumination of said volume element of said sample.

Claim 122 (previously presented) The method of claim 105, further comprising the step of controlling an array of field stops in order to probe a volume element of said sample.

Claim 123 (currently amended) The method of claim 105+20, wherein said field stop is controlled by a movable mirror.

Claim 124 (previously presented) The method of claim 105, wherein said illuminating step comprises focusing said illuminating radiation on said sample using a plurality of movable mirrors.

Claim 125 (previously presented) The method of claim 106, wherein said mirror comprises a beam splitter.

Claim 126 (previously presented) The method of claim 115, wherein said sheath comprises a single-use disposable sheath.

Claims 127 – 147 (canceled)

Claim 148 (previously presented) The method of claim 105, further comprising the step of analyzing said collected radiation to determine one or more characteristics of said sample.

Claim 149 (canceled)

Claim 150 (previously presented) The method of claim 108, wherein said detected radiation comprises at least one of scattered radiation and fluorescent radiation.

Claim 151 (canceled)

Claim 152 (currently amended) An apparatus for sequentially scanning a plurality of substantially non-overlapping regions of an internal biological sample, the apparatus comprising:
illuminating optics for sequentially illuminating said plurality of substantially non-overlapping regions of said sample with electromagnetic radiation ~~at a pulse rate greater than 25 pulses per second~~, said sample not surgically exposed; and
at least one field stop for targeting said illuminating radiation to a volume element of said sample, wherein said at least one field stop comprises at least one member selected from the group consisting of a liquid crystal, a ferroelectric element, a polymer dispersed liquid crystal, and an electromechanical shutter; and
collecting optics for collecting electromagnetic radiation emanating from said regions of said sample.

Claim 153 (previously presented) The apparatus of claim 152, wherein said illuminating optics comprises a movable mirror for focusing said illuminating radiation on said sample.

Claim 154 (previously presented) The apparatus of claim 152, further comprising at least one detector for detecting said emanating radiation.

Claim 155 (previously presented) The apparatus of claim 154, wherein said collecting optics comprises a movable mirror for focusing said emanating radiation on said at least one detector.

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Claim 156 (previously presented) The apparatus of claim 155, wherein said movable mirror comprises a beam splitter.

Claim 157 (canceled)

Claim 158 (canceled)

Claim 159 (previously presented) The apparatus of claim 152, further comprising a sheath for preventing contact between said apparatus and said sample.

Claim 160 (previously presented) The apparatus of claim 159, wherein said sheath is configured to allow transmission of said illuminating and said emanating radiation.

Claim 161 (canceled)

Claim 162 (currently amended) The apparatus of claim 152~~161~~, wherein a dimension of said at least one field stop allows non-diffraction-limited illumination of said volume element of said sample.

Claim 163 (previously presented) The apparatus of claim 152, further comprising an array of field stops for targeting said illuminating radiation to a plurality of volume elements of said sample.

Claim 164 (previously presented) The apparatus of claim 152, further comprising a plurality of mirrors for illuminating said regions of said sample.

Claim 165 (previously presented) The apparatus of claim 154, wherein said at least one detector comprises at least one optical element and at least one processor.

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Claim 166 (previously presented) The apparatus of claim 154, wherein said at least one detector is adapted to detect at least one of scattered radiation and fluorescent radiation.

Claim 167 (previously presented) The apparatus of claim 159, wherein said sheath comprises a single-use disposable sheath.

Claim 168 (currently amended) The apparatus of claim 152161, further comprising a mirror for controlling said at least one field stop.

Claim 169 (canceled)